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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/526,546	03/03/2005	Uwe Gorges	034193-016	5276
21839	7590	11/01/2007		
BUCHANAN, INGERSOLL & ROONEY PC POST OFFICE BOX 1404 ALEXANDRIA, VA 22313-1404				
			EXAMINER	
			EDWARDS, LAURA ESTELLE	
			ART UNIT	PAPER NUMBER
			1792	
			NOTIFICATION DATE	DELIVERY MODE
			11/01/2007	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

ADIPFDD@bipc.com
debra.hawkins@bipc.com

Office Action Summary	Application No. 10/526,546	Applicant(s) UWE GORGES ET AL	
	Examiner Laura Edwards	Art Unit 1792	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 14 August 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-14 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

Claim Rejections - 35 USC § 103

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claims 1-5, 8, and 10-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lierke et al (US 4,981,425) in view of Bauckhage et al (US 5,164,198) and Onishi (US 3,198,170) for reasons set forth in the previous office action.

Claims 6, 7, and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lierke et al (US 4,981,425), Bauckhage et al (US 5,164,198), and Onishi (US 3,198,170) as applied to claim 1 above, and further in view of Orme et al (US 5,259,593) for reasons set forth in the previous office action.

With respect to claim 13, Orme et al establish the conventional wisdom of configuring pipe outlets of an atomizer (i.e., of the vibrational wave transducer type) in a triangular configuration or any desired configuration to produce complicated forms or to enable the spray of material to conform to the shape of the workpiece being worked upon as evidenced by col. 5, lines 28-47 and col. 8, lines 7-55; See Figs. 2-3. Therefore, Applicants' recitation of the pieces of pipe being arranged in an equilateral triangle would be well within the purview of one skilled in the art.

Claims 9 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lierke et al (US 4,981,425), Bauckhage et al (US 5,164,198), and Onishi (US 3,198,170) as applied to

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claim 1 above, and further in view of Pitchon et al (US 4,600,472) for reasons set forth in the previous office action.

Response to Arguments

Applicants' arguments filed 8/14/07 have been fully considered but they are not persuasive.

Applicants contend that neither the Lierke patent, the Bauckhage patent nor the Onishi patent disclose or suggest a paint feeding device by which paint can be fed into the vicinity of a maximum of the sound particle velocity of an ultrasonic field, wherein the paint feeding device has in the region of the standing ultrasonic field at least two pieces of pipe for discharging paint, and wherein at least two of the pieces of pipe are arranged in the region of a selected maximum of the sound particle velocity of the standing ultrasonic field, as in Applicants' independent claim 1. This argument is not deemed persuasive in light of the well established teachings of Lierke, Bauckhage, and Onishi as combined with the proper motivation as provided by *Graham v. Deere*.

Applicants respectfully disagree with the Examiner's assertion in the Office Action on page 4, paragraph 4, beginning at line 5 that the pipe 7 disclosed in the Lierke patent is arranged in the region of a selected maximum of the sound particle velocity of a standing ultrasonic field. The Lierke patent description relates to the provision of molten metals. As discussed in the Lierke patent at column 3, beginning at line 50, a pressure sensor 8 is provided which measures the sound pressure of the standing wave 14 and passes the maximum value onto the electronic guiding system 9. The electronic guiding system 9 always seeks that position where the pressure

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of the sound field 14 is at its maximum. Thus, the Lierke patent relates to sound pressure and not to the maximum of the sound particle velocity as in Applicants' claim 1. This argument is well taken in that Lierke does not explicitly state the pipe 7 being in the region of a selected maximum of the sound particle velocity of the standing ultrasonic field but Lierke does illustrate the pipe in a region or vicinity about the maximum of the sound particle velocity. Without an exact dimension or spatial relationship, the pipe being in the region of the maximum of the sound particle velocity does not have to be exact but merely within the region.

Applicants do not believe that the Bauckhage patent overcomes the deficiencies of the Lierke patent, the Bauckhage patent relates to an apparatus for pulverizing a jet of liquid material, such as molten material. The Examiner cites the Bauckhage patent for teaching a plurality of crucibles 10 as shown in Figure 5. Three crucibles 10 are located parallel to oscillating axis 24 and the jets emerging therefrom are directed to the three nodal areas 28 and 29 of the ultrasonic field 27 to pulverize the liquid metal discharged from the crucibles 10, The Bauckhage patent does not disclose arranging the crucibles 10 in a region of a selected maximum of a sound particle velocity. This argument is deemed moot in light of the teachings of Lierke which establishes the pipe 7 in a region or vicinity about the maximum of the sound particle velocity. Bauckhage merely establishes the conventional wisdom of using in an ultrasonic standing wave atomizer, plural pipes having plural outlets in communication with sonotrodes in order to atomize the material at a high pulverizing capacity over a larger surface area (col. 4, lines 32-41; see Fig. 5). The proper motivation for combining the teachings of Bauckhage have been supplied above.

Applicants contend that the Onishi patent does not overcome the deficiencies of the Lierke and Bauckhage patents because the Onishi patent provides no teaching or suggestion of at least two pieces of pipe for discharging paint in the region of a selected maximum of the sound particle velocity of a standing ultrasonic field. This argument is deemed moot because Lierke illustrates a pipe in a region or vicinity about the maximum of the sound particle velocity and Bauckhage establishes use of a plurality of pipes with Onishi establishing the type of material to be used with the apparatus being paint. The proper motivation for the combinations has been provided above.

Applicants contend that claim 4 is allowable over the prior art of record because claim 4 recites that paint outlet openings of the at least two pieces of pipe in the region of the selected maximum of the sound particle velocity of a standing ultrasonic wave are arranged on an imaginary straight line, wherein the straight line is perpendicular to an imaginary center line which passes through the centroids of opposing sound faces of the sonotrode and of the component. The crucibles 10 of Fig. 5 of the Bauckhage patent are arranged parallel to the oscillating axis 24. This argument is not deemed persuasive in that again Applicants seek patentability over the arrangement of the pipes in the region of the maximum of the sound particle velocity of a standing ultrasonic wave and in light of the combined prior art and it would appear that configuring the pipes in the region of the maximum of the sound particle velocity of a standing ultrasonic wave would be within the purview of one skilled in the art.

Conclusion

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Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).


A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Laura Edwards whose telephone number is (571) 272-1227. The examiner can normally be reached on Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nadine Norton can be reached on (571) 272-1465. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.


Laura Edwards
Primary Examiner
Art Unit 1792

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October 29, 2007